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Executive Vice President
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January 22, 1991
JPN-91-004

U. S. Nuclear Regulatory Commission
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SUBJECT: James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
**Revised Safety Evaluation Regarding Proposed Technical
Specifications Changes Deleting the
HPCI and RCIC Time Delay Relays (JPTS-89-022)**

REFERENCE: 1. NYPA letter, J. C. Brons to NRC dated April 4, 1990 (JPN-90-029)
regarding Proposed Technical Specification Changes Deleting the
Time Delay for HPCI and RCIC Automatic Isolation (JPTS-89-022)

Dear Sir:

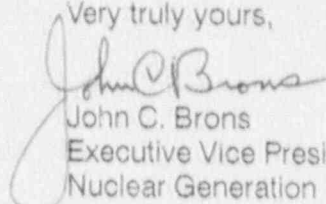
In Reference 1, the Authority proposed changes to the James A. FitzPatrick Technical Specifications to delete the functional test requirements for the High Pressure Coolant Injection (HPCI) and the Reactor Core Isolation Cooling (RCIC) automatic isolation time delay relays and timers. The Safety Evaluation included with those changes incorrectly stated that the changes were consistent with the plant as described in the FSAR.

A revised Safety Evaluation which corrects this error is attached. It supersedes the one included with Reference 1 and justifies the requested Technical Specification changes based on the FitzPatrick High Energy Line Break Analyses and the original design basis for these time delays. The conclusions remain the same and the revised Technical Specification pages included with Reference 1 are not affected.

AOD 11

Should you or your staff have any questions regarding the proposed changes, please contact Mr. J. A. Gray, Jr.

Very truly yours,


John C. Brons
Executive Vice President
Nuclear Generation

STATE OF NEW YORK
COUNTY OF WESTCHERSTER

Subscribed and sworn to before me
this 22nd day of January 1991.



Notary Public

MINA HOLDEN
NOTARY PUBLIC, State of New York
Westchester County
No. 4829150
My Commission Expires Aug. 31, 1991

cc: U. S. Nuclear Regulatory Commission
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New York Power Authority
James A. FitzPatrick Nuclear Power Plant

Safety Evaluation Regarding Technical Specification Changes
Deleting the HPCI and RCIC Time Delay Relay Surveillance
Test Requirements - Revision 1

I. DESCRIPTION OF THE PROPOSED CHANGES

The proposed changes to the James A. FitzPatrick Technical Specifications revise Table 4.2-2, "Minimum Test and Calibration Frequency for Core and Containment Cooling Systems," on page 80. The changes delete the reference to footnote (9) for items 5 and 7 on Table 4.2-2. This deletes the requirement for functional testing of the time delay relays and timers for the High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) automatic isolation signals.

II. PURPOSE OF THE PROPOSED CHANGES

To make the Technical Specifications consistent with the current plant configuration and the assumptions used in the plant's accident analyses, the requirement to functionally test the time delay devices for the HPCI and RCIC automatic isolation signals is being deleted.

The Authority submitted LER 89-008 (References 3 and 4) because the time delay relays for the HPCI and RCIC automatic isolation signals on high ambient temperature had not been calibrated or functionally tested since initial plant startup. The Authority subsequently determined that the time delay devices are not required for safe plant operation and permanently removed the timer circuitry during the 1990 refueling outage. The purpose of this proposed amendment is to revise Technical Specification Table 4.2-2 to reflect this modification and the current plant configuration.

III. IMPACT OF THE PROPOSED CHANGES

The original design of the automatic isolation for HPCI and RCIC included two time delay devices for postulated steam supply line or valve packing leaks. The HPCI and RCIC steam lines are physically adjacent where the steam lines penetrate primary containment. In this area, steam line break (high room temperature) detectors could be activated by a steam break or leak in either line. To avoid unnecessary isolations of one or both system due to a steam leak, time delay devices were installed to allow plant personnel time to investigate. If the source of the leakage could be identified during the time delay, the appropriate steam supply line could be isolated and an automatic isolation of both steam supply lines avoided.

The FSAR accident analyses and the High Energy Line Break (HELB) analyses, however, do not consider the existence of a time delay (i.e., the analyses assume that the lines isolate with no delay). The time delay circuits for isolation on high room temperatures were removed during the

1990 refueling outage to make HPCI and RCIC automatic isolation circuitry consistent with these analyses.

The proposed Technical Specification changes delete the requirement to functionally test time delay circuits which have been removed from the plant. Operation of the plant in accordance with this proposed amendment is not considered a safety concern because:

- Section 14.6.1.5 of the FitzPatrick FSAR describes the effects of a main steam line break accident outside secondary containment on the reactor coolant system, the quantity and type of radioactive material released and the potential radiological effects to offsite persons. Since the potential consequences of this break are more severe than all other steam line breaks outside containment, no other breaks need be analyzed. Analyses show that in the event of main steam line break, primary containment and the reactor vessel will isolate due to high steam flow.
- HELB analyses used to establish pressure-temperature profiles for environmental qualification of plant equipment assume that automatic isolation of HPCI or RCIC steam supply occurs promptly (i.e., no time delay). HELB analyses did consider instrument response time.
- Eliminating the time delay for automatic HPCI or RCIC isolation will not significantly affect the ability of the operators to investigate high HPCI or RCIC area temperatures. Other methods for the early detection and investigation of steam line breaks are available to operators. The FitzPatrick Emergency Plant Information Computer (EPIC) or plant annunciators monitor temperatures in the vicinity of HPCI and RCIC equipment and will alert the operator if temperatures rise above normal. Operators will still have adequate time to investigate high area temperatures.

Fifteen years of operating experience has shown that high area temperature alarms are infrequent and that detector setpoints are far enough above normal area temperature levels to preclude unnecessary isolations. Therefore, the isolation frequency is not expected to change as a result of this modification.

- Simultaneous isolation of both the HPCI and RCIC steam supply lines during postulated pipe breaks outside primary containment does not affect safe shutdown capability. Low Pressure Coolant Injection (LPCI), in conjunction with the Automatic Depressurization System (ADS), is functionally redundant to HPCI and RCIC.

IV. EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATION

Operation of the James A. FitzPatrick Nuclear Power Plant in accordance with this proposed amendment would not involve a significant hazards consideration, as defined in 10 CFR 50.92, since the proposed changes would not:

1. involve a significant increase in the probability or consequences of an accident previously evaluated. The FSAR accident analyses and HELB analyses do not consider the presence of steam line isolation delay circuitry. Since the changes will make the

FSAR and Technical Specifications consistent, the probability or consequences of accident are not changed.

The potential consequences of either HPCI or RCIC turbine steam line break are less severe without the presence of the delay isolation. Without the delay circuitry, coolant inventory lost through a postulated leak is reduced. Consequently, peak temperatures in the vicinity of the leak are reduced.

The automatic isolation circuitry originally included time delays as an operational convenience. Time delays were included in the original plant design to allow operators time to investigate high area temperature alarms and manually isolate the leaking steam line.

2. create the possibility of a new or different kind of accident from those previously evaluated. The removal of the time delay equipment from the automatic isolation circuitry cannot create a new or different type of accident. High area temperatures will still result in automatic steam line isolation.

Simultaneous isolation of both the HPCI and RCIC steam supply lines during postulated pipe breaks outside primary containment does not affect safe shutdown capability. Low Pressure Coolant Injection (LPCI), in conjunction with the Automatic Depressurization System (ADS), is functionally redundant to HPCI and RCIC.

The proposed changes revise the Technical Specifications to reflect the current plant configuration and the assumptions used in the plant's accident analyses.

3. involve a significant reduction in the margin of safety since the isolated condition is inherently safer than an unisolated condition. The changes will increase the margin of safety by decreasing the amount of time that elapses between the detection of a steam line leak and an automatic isolation signal. A high area temperature in the vicinity of the HPCI or RCIC steam lines will promptly and automatically isolate both steam supply lines. Based on operational experience, the increased probability of a spurious isolation is small. Other methods for the early detection and investigation of steam line breaks are available to operators. In the event of an accident coincident with the isolation of both steam lines, a functionally redundant system remains available to safely shut down the plant.

The proposed changes do not involve a reduction in the margin of safety because the proposed changes delete functional testing of time delay relays and timers which have been removed from the plant.

V. IMPLEMENTATION OF THE PROPOSED CHANGES

Implementation of the proposed changes will not impact the ALARA or Fire Protection Programs at the FitzPatrick plant, nor will the changes impact the environment.

Vi. CONCLUSION

These changes, as proposed, do not constitute an unreviewed safety question as defined in 10 CFR 50.59. That is, they:

- a. will not increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report;
- b. will not increase the possibility for an accident or malfunction of a different type from any evaluated previously in the safety analysis report;
- c. will not reduce the margin of safety as defined in the basis for any technical specification; and
- d. involve no significant hazards consideration, as defined in 10 CFR 50.92.

Vii. REFERENCES

1. James A. FitzPatrick Nuclear Power Plant Updated Final Safety Analysis Report, Sections 7.4 "Emergency Core Cooling System Instrumentation and Control," 4.10 "Reactor Coolant System Leakage Detection and Leakage Rate Limits," and 14.6 "Analysis of Design Basis Accidents."
2. James A. FitzPatrick Nuclear Power Plant Safety Evaluation Report (SER), dated November 20, 1972 and Supplements.
3. LER 89-008-00, dated June 16, 1989, "High Pressure Coolant Injection and Reactor Core Isolation Cooling Made Inoperable due to Procedure Deficiency Causing Missed Surveillance."
4. LER 89-008-01, dated September 28, 1990, "High Pressure Coolant Injection and Reactor Core Isolation Cooling Made Inoperable due to Procedure Deficiency Causing Missed Surveillance."